

Mr. A. D. Frye, of Bellmore, Long Island, writes me under date of March 27, 1887, as follows: "Two years since I applied to you for some brown trout to stock a public stream, called Newbridge Creek, at this place, and you furnished them. I have by inquiry learned that last summer some of these fish were taken which weighed three-quarters of a pound."

According to this, these fish could not have been more than one and a half years old; and from my experience I think that the brown trout, as it is called in England, and which is the common brook trout of Europe (*Salmo fario*) is a quick-growing fish, which is destined to become a favorite in America when it is thoroughly known. I have taken this fish with a fly, and consider it one of the gamiest, in fact, *the* gamiest, trout that I ever handled with a rod. I will state, however, that angling friends who have had more extended experience in European fishing than I have say that the Loch Leven trout is a gamier and better fish than the brown trout, but I have had no experience with the Loch Leven fish further than to hatch it. I believe that the brown trout will be found to be a better fish, taking it all around, than our own native *fontinalis*. The reasons for this belief are: (1) It is of quicker growth; (2) it is gamier; (3) except in the breeding season, when the males of *fontinalis* are brilliantly colored, it is fully as handsome; (4) from what I can learn I incline to think it will bear water several degrees warmer than *fontinalis*, and therefore it is adapted to a wider range.

COLD SPRING HARBOR, N. Y., April 20, 1887.

## S.—THE SPONGE FISHERIES OF FLORIDA.

By J. G. RUGE.

These fisheries give employment to the owners and crews of over three hundred vessels of from 5 to 50 tons burden. They are carried on with some risk from the weather, and at times with much hardship. Each vessel is fitted out for a trip of about four to eight weeks, carrying from two to five dinghies and a crew of five to twelve men; and makes two trips a year, usually in spring and winter, the latter being the best catch. The position of the sponge as it grows on the bottom is ascertained by means of the water-glass, which is a simple bucket with a glass bottom in it, through which when placed in the water one can readily make out articles at the depth of several fathoms.

The Florida sponges are chiefly of four sorts: Sheepswool, velvet, reef, and glove. The sheepswool is the most valuable. It requires about five to six years for a sponge to grow to 8 inches in diameter, and about three years to make 6 inches. The warmer the winter (which makes the water warmer) the faster they grow. The fishermen soon learn by experience to distinguish the grades before taking them.

Owing to the clearness of the water they are able to do this, but rarely beyond the depth of 35 feet, as that is about the limit that can be reached by the naked eye; and, besides, the weight of the poles of this length (which weigh about 30 pounds, with an iron four-prong hook on the end) is as much as a man can handle. The deeper the fishing the greater is the skill required, and it is a rare thing to find a fisherman so active and muscular as to handle successfully a 40-foot pole.

The sponges when first caught resemble heads of decayed cabbage. When taken from the water they are thrown on the deck of the vessel and left long enough for the animal matter or sarcode which they contain to decompose. They are next placed in pens or "crawls" on the beach, where the ebb and flow of the tide-water washes out the dead matter. After several days they are thoroughly cleaned by the fishermen by beating and scraping, and are then placed on strings and allowed to remain on the shore away from the water, where they are more or less bleached by the action of the sun and dew. They are then ready for market, when the vessels take their catch on board and proceed to town to sell them.

The sponges are graded in the markets by the different buyers as their judgment and wants require, in order to make a value. The buyers make sealed bids for the sponges, which are not sold by the pound but by the lot, and this to the uninitiated is "buying a cat in the bag." If the catch is a fair one, each man will receive as his share from \$60 to \$125, while the vessel gets one-third of the total net earnings. After the buyers procure their lots they assort the sponges in different sizes and grades, after removing therefrom bits of rock, shell, or any other foreign substance that may be present. This is done by beating the root of the sponges with mallets on a wooden block. The only impurities of sand and other substances are in the root or base of the sponge, as sand is as foreign to the body of a natural living sponge as it would be in the flesh of a fish or animal. Sponges are packed in bales of from 25 to 60 pounds in weight.

A pure sponge is free from all rock, sand, or any material used as loading or bleaching. Some few years ago sponges were much lower in price, when the Florida sheepswool was not appreciated as it is now. Prices have continued to advance slowly, and owing to the extreme cold of last winter all the sponges inside the depth of 20 feet were killed, thus making the stock scarcer. This caused another advance, but there is a limit in prices, which is now attained, as the Cuban and Bahama sponges are used as a substitute for many purposes by reason of their lower price.

The present wholesale price is high enough to stimulate the adulteration of the goods, for which purpose several substances are used, such as glycerine, sand, lime, marble dust, and litharge. The glycerine and sand are not in the least injurious and add the least weight, while the lime bleaches and adds a greater weight than the sand. Marble dust

is heavier and is retained in the pores better than either sand or lime, while litharge is the heaviest and more like the natural color of the sponge than either of the other articles used. It fills the pores better and there is less chance of detecting its use than that of the other substances, but it is highly injurious. It is frequently used in increasing the weight of sponges to such an extent as to reduce the price from 50 cents to \$1 per pound. It will thus be seen that dealers and consumers need to be constantly on their guard in purchasing sponges, or to buy only of the most reputable houses. Whenever sponges purporting to be pure or natural are offered below the ruling market price of reputable houses, there is good cause for suspecting them to be adulterated.

APPALACHICOLA, FLA., May 5, 1887.

9.—STATISTICS OF THE FISHERIES OF THE PROVINCE OF BRITISH COLUMBIA FOR 1886.

By THOMAS MOWAT,

*Inspector of the Fisheries.*

*Statistics of vessels, nets, establishments, and men engaged in the fisheries of British Columbia during 1886.*

13 steamers and steam auxiliaries, from 3 to 60 tons .....	}	\$126, 000	
16 schooners, from 40 to 80 tons .....			
18 sloops, from 1 to 12 tons .....			
994 fishing boats .....	}	52, 465	
196 fishing canoes, cedar .....			
64 flat-boats and scows .....			7, 615
			\$186, 080
1,066 salmon nets, 332,220 yards .....		123, 690	
2 herring seines .....		600	
36 herring nets .....		4, 500	
65 fish seines .....		13, 375	
14 eulachon nets .....		1, 700	
			143, 865
25 salmon canneries, estimated value .....		449, 500	
1 oil factory, Queen Charlotte Islands .....		10, 000	
1 floating cannery and oil factory .....		60, 000	
Various salting stations .....		20, 000	
Ice-houses and buildings for the shipment of salmon in ice .....		3, 000	
			542, 500
Total value .....			872, 445
Sailors .....			167
Fishermen .....			3, 608
Native hunters .....			291
Shoremen .....			2, 145
Total number of men engaged .....			6, 211